

WHAT IS CLAIMED IS:

1. A color ink-jet printer comprising:

a first ink ejecting portion operable to eject droplets of a first ink of a first color;

a second ink ejecting portion operable to eject droplets of a second ink of a second color other than said first color, said second ink being dried at a higher rate than said first ink;

a first control portion operable to control said first ink ejecting portion, on the basis of a gray-scale value at a picture element of an image at which each dot of said first ink is to be formed on a recording medium, such that a total volume of at least one droplet of said first ink ejected by said first ink ejecting portion to form said each dot of the first ink on the recording medium is equal to any one of a plurality of different total volume values; and

a second control portion operable to control said second ink ejecting portion, on the basis of a gray-scale value at a picture element of the image at which each dot of said second ink is to be formed on the recording medium, such that a total volume of at least one droplet of said second ink ejected by said second ink ejecting portion to form said each dot of said second ink on the recording medium, is equal to one of said plurality of different total volume values, which one is other than a smallest one of said different total volume values except a zero value which does not cause ejection of any ink droplet from said second ink ejecting portion.

2. The color ink-jet printer according to claim 1, further comprising first and second pulse generators operable to generate drive pulse signals to be applied to said first and second ink ejecting portions, respectively, such that the total volume of said at least one droplet forming each dot of the first ink and the total volume of said at least one droplet forming each dot of said second ink are variable with a change in the number of said at least one droplet to be ejected from each of said first and second ink ejecting portions to form each ink dot on the recording medium.

3. The color ink-jet printer according to claim 2, wherein the total volume of said at least one droplet forming each dot of the first ink and the total volume of said at least one droplet forming each dot of the second ink are variable while the volume of each of said at least one droplet is kept constant.

4. The color ink-jet printer according to claim 1, further comprising first and second pulse generators operable to generate drive pulse signals to be applied to said first and second ink ejecting portions such that the total volume of said at least one droplet forming each dot of said first ink and the total volume of said at least one droplet forming each dot of said second ink are changed by changing the volume of at least one of said at least one ink droplet to be ejected from each of said first and second ink ejecting portions.

5. The color ink-jet printer according to claim 4, wherein said first and second pulse generators are operable to generate said drive pulse signals such that each dot of each of said first and second inks is provided by only one ink droplet, and such that the volume of said one ink droplet is changed to change a size of said each dot on the basis of the gray-scale value at the corresponding picture element of the image.

6. The color ink-jet printer according to claim 1, wherein said second control portion is operable to select said one of said plurality of different total volume values, within a predetermined length of time after a moment of initiation of an operation of said second ink ejecting portion to eject said at least one droplet of said second ink, which operation is initiated after expiration of a predetermined non-ink-ejection period during which said second ink ejecting portion is kept in a non-operated state, said second control portion selecting any one of said plurality of different total volume values on the basis of the gray-scale value at the picture element corresponding to said each dot of said second ink, after expiration of said predetermined length of time.

7. The color ink-jet printer according to claim 1, further comprising a pulse generator operable to generate drive pulse signals to be applied to said second ink

ejecting portion such that said plurality of different total volume values comprise at least three different total volume values including said zero value, said smallest value, and at least one value larger than said smallest value, and wherein when said gray-scale value at said picture element corresponds to said smallest value, said second control portion selects one of said at least one value larger than said smallest value.

8. The color ink-dot printer according to claim 7, wherein said smallest value corresponds to a very small dot of said second ink, and said at least one value larger than said smallest value includes at least two values including two values which respectively correspond to a small dot of said second ink and a dot of said second ink larger than said small dot, and wherein said one of said at least one value larger than said smallest value is one of said two values which corresponds to said small dot.

9. The color ink-jet printer according to claim 1, wherein said first and second colors are selected from among, black, yellow, magenta and cyan.

10. The color ink-jet printer according to claim 1, further comprising a pulse-waveform-data memory for storing pulse-waveform data indicative of a plurality of different waveforms of drive pulse signals to be applied to said first and second ink ejecting portions, said plurality of different waveforms

corresponding to said plurality of different total volume values, respectively, and wherein said first control portion is operable to select one of said plurality of different waveforms that corresponds to said any one of said plurality of different total volume values, and said second control portion is operable to select one of said plurality of different waveforms that corresponds to said one of said plurality of different total volume values.

11. A color ink-jet printer comprising:

a first ink ejecting portion operable to eject droplets of a first ink of a first color;

a second ink ejecting portion operable to eject droplets of a second ink of a second color other than said first color, said second ink being dried at a higher rate than said first ink;

a pulse-waveform-data memory for storing pulse-waveform data indicative of a plurality of different waveforms corresponding to respective different total volume values of at least one droplet of each of said first ink and said second ink;

a first control portion operable to select any one of said plurality of different waveforms stored in said pulse-waveform-data memory, on the basis of a gray-scale value at a picture element of an image at which each dot of said first ink is to be formed on a recording medium, and control said first ink ejecting portion to eject said at least one droplet of said first ink, on the basis of the selected any one of said plurality of different waveforms; and

a second control portion operable to select, on the basis of a gray-scale value at a picture element of the image at which each dot of said second ink is to be formed on the recording medium, one of said plurality of different waveforms which corresponds to one of said plurality of different total volume values, said one of said plurality of different total volume values being other than a smallest one of said different total volume values except a zero value which does not cause ejection of any ink droplet from said second ink ejecting portion, and control said second ink ejecting portion to eject said at least one droplet of said second ink, on the basis of the selected one of said plurality of different waveforms.

12. The color ink-jet printer according to claim 11, further comprising a first pulse generator operable to generate a drive pulse signal to be applied to said first ink ejecting portion, on the basis of said any one of said plurality of different waveforms selected by said first control portion, and a second pulse generator operable to generate a drive pulse signal to be applied to said second ink ejecting portion, on the basis of said one of said plurality of different waveforms selected by said second control portion.

13. The color ink-jet printer according to claim 11, wherein said plurality of different waveforms stored in said pulse-waveform-data memory correspond to the respective different total volume values which comprise at least two different total volume values including said smallest value and at

least one value larger than said smallest value, said second control portion being operable to select one of said at least one value larger than said smallest value when said gray-scale value at said picture element corresponds to said smallest value.

14. The color ink-jet printer according to claim 11, further comprising a time counter operable to measure a non-ink-ejection time during which said second ink ejecting portion is kept in a non-operated state, and wherein said second control portion selects said one of said plurality of different waveforms on the basis of the gray-scale value at the picture element corresponding to said each dot of said second ink when an operation of said second ink ejecting portion is initiated after said non-ink-ejection time measured by said time counter has become longer than a predetermined non-ink-ejection period, said time counter being further operable to measure a predetermined length of time after a moment of initiation of said operation of said second ink ejecting portion to eject said at least one droplet of said second ink, said second control portion selecting any one of said plurality of different waveforms on the basis of the gray-scale value at the picture element corresponding to said each dot of said second ink after said predetermined length of time has been measured by said time counter.